3.3 AIR QUALITY

This section evaluates the effects on air quality associated with short-term and long-term impacts resulting from buildout of the Vintner's Square Shopping Center. Information in this section is based primarily on the G*uide for Assessing and Mitigating Air Quality Impacts (GAMAQI)*, prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD), August 20, 1998 (as revised through January 10, 2002); G*uide for Assessing and Mitigating Air Quality Impacts Technical Document*, prepared by the San Joaquin Valley Air Pollution Control District (SJVAPCD), August 20, 1998 (as revised through January 10, 2002); Air Quality Data (California Air Resources Board (CARB) 1995 through 2001); and the SJVAPCD *2002 and 2005 Rate of Progress Plan* (May 16, 2002).

3.3.1 EXISTING CONDITIONS

San Joaquin Valley Air Basin

The City of Lodi is located in the northern sector of the San Joaquin Valley Air Basin (Basin), characterized as having an "inland Mediterranean" climate (a semi-arid environment with cool winters, dry summers and moderate rainfall). The Basin is approximately 250 miles long and averages 35 miles wide. The Basin is the second largest in the state and is defined by the Sierra Nevada mountains to the east (8,000 to 14,000 feet in elevation), the Coastal Range to the west (averaging 3,000 feet in elevation) and the Tehachapi mountains to the south (6,000 to 8,000 in elevation). The San Joaquin Valley (SJV) is considered a "bowl" since it is generally flat characteristic with a slight downward gradient to the northwest, opening to the Carquinez Straits where the San Joaquin-Sacramento Delta empties into the San Francisco Bay.

Climate

The climate is characterized by moderate temperatures and comfortable humidities with precipitation limited to a few storms during the winter season (November through April). The average annual temperature varies little throughout the Basin, and averages 90 degrees Fahrenheit. However, with a less pronounced oceanic influence, the northern and southern portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures of over 100 degrees in recent years. January is usually the coldest month at all locations while July and August are usually the hottest months of the year. Periods of heavy fog are frequent; and low stratus clouds, occasionally referred to as "high fog" are a characteristic climatic feature. Annual average relative humidity in Lodi is 87 percent. Precipitation is typically 9.25 inches annually in the Valley floor. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

Wind

One of the most important climatic factors is the direction and intensity of the prevailing winds. During the summer months, the wind usually originates at the north end of the SJV and flows in the south-southeasterly direction into the Southeast Desert Air Basin (SDAB). In the winter, the wind originates from the south end of the SJV and flows in a northeasterly direction. With very light average wind speeds (less than 10 miles per hour), the Basin has a limited capability to disperse air contaminants horizontally. Whether there is air movement or stagnation during the morning and evening hours (before these dominant patterns take effect) is one of the critical factors in determining the smog condition on any given day.

Sunlight

The presence and intensity of sunlight are necessary prerequisites for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain original, or "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen) react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind from the emission sources. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of the SJV.

Temperature Inversions

A temperature inversion is a reversal in the normal decrease of temperature as altitude increases. In most parts of the country, air near ground level is warmer than the air above it. Semi-permanent systems of high barometric pressure fronts establish themselves over the Basin, deflecting low-pressure systems that might otherwise bring cleansing rain and winds. The height of the base of the inversion is known as the "mixing height" and controls the volume of air available for the mixing and dispersion of air pollutants.

The interrelationship of air pollutants and climatic factors are most critical on days of greatly reduced atmospheric ventilation. On days such as these, air pollutants accumulate because of the simultaneous occurrence of three unfavorable factors: low inversions, low maximum mixing heights and low wind speeds. Although these conditions may occur throughout the year, the months of July, August, and September generally account for more than 40 percent of these occurrences.

The potential for high contaminant levels varies seasonally for many contaminants. During late spring, summer and early fall, light winds, low mixing heights and sunshine combine to produce conditions favorable for the maximum production of oxidants, mainly ozone. When strong surface inversions are formed on winter nights, especially during the hours before sunrise, coupled with near-calm winds, carbon monoxide from automobile exhausts becomes highly concentrated. The highest yearly concentrations of carbon monoxide, oxides of nitrogen and nitrates are measured during November, December and January.

Ambient Air Quality Standards

Air Quality Standards

Air quality at any location is dependent on the regional air quality and local pollutant sources. Regional air quality is primarily a function of Air Basin topography and wind patterns.

The Clean Air Act, which was last amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards for pollutants considered harmful to public health and the environment. The Clean Air Act establishes two types of national air quality standards: *Primary Standards* set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly; *Secondary Standards* set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards (OAQPS) has set National Ambient Air Quality Standards (NAAQS) for six principal pollutants, which are called "criteria" pollutants. Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air ($\mu g/m^3$). California Ambient Air Quality Standards (CAAQS) for these pollutants and NAAQS are included in Table 3.3.1, *Local Air Quality Levels.*

The CARB is required to designate areas of the State as in attainment, non-attainment, or unclassified for any State standard. An "attainment" designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that the data does not support either an attainment or non-attainment status.

State and Federal ambient air quality standards have been established for the following criteria pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), fine particulate matter (PM_{10}) and lead (Pb). For most of these pollutants, the State standards are more stringent than the Federal standards. The State has also established ambient air quality standards for hydrogen sulfide, vinyl chloride and visibility reducing particulates.

In 1997, EPA announced new ambient air quality standards for O_3 and PM_{10}. The new standards were intended to provide greater protection of public health. EPA proposed to phase out the 1-hour O_3 standard and replace it with an 8-hour standard. With respect to PM_{10}, EPA proposed a new standard for the smaller particles, $PM_{2.5}$, (particulates less than 2.5 microns in diameter).
The $PM_{2.5}$ standards included an annual standard and a 24-hour standard.[1] Following announcement of the new national standards, CARB and the SJVAPCD began collecting monitoring data to determine the region's attainment status with the new standards.

Attainment Status

Despite implementing many strict controls, the Basin still fails to meet the Federal and State air quality standards for two of the six criteria pollutants: O_3 and PM_{10} (Table 3.3.1). For the Federal standards, O_3 is designated non-attainment/severe and PM_{10} is designated non-attainment/serious. For the State, O_3 is designated as non-attainment/severe and PM_{10} is designated as non-attainment.

1 There are two new Federal PM2.5 standards: a 24-hour limit set at 65 micrograms per cubic meter (mg/m3) of ambient air and an annual average limit set at 15 mg/m3. The current PM10 standards will be retained. Areas will be considered in attainment for the annual PM2.5 standard when the three-year average of the annual arithmetic mean is equal to or less than 15μg/m3. For the new 24-hour standard, attainment will be based on the 98th percentile of PM2.5 concentrations for each year, averaged over three years, to help compensate for any high concentrations that may be due to unusual meteorological conditions.

TABLE 3.3-1
LOCAL AIR QUALITY LEVELS [1,2,3,4]

Pollutant	California Standard	Federal Primary Standard	Year	Maximum[2] Concentration	Days (Samples) State/Federal Std. Exceeded
Carbon Monoxide	20 ppm for 1 hour	35 ppm for 1 hour	1997 1998 1999 2000 2001	7.7 8.9 8.3 8.4 5.3	0/0 0/0 0/0 0/0 0/0
	9 ppm for 8 hour	9 ppm for 8 hour	1997 1998 1999 2000 2001	3.60 7.18 5.34 3.91 6.03	0/0 0/0 0/0 0/0 0/0
Ozone	0.09 ppm for 1 hour	0.12 ppm for 1 hour	1997 1998 1999 2000 2001	0.102 0.126 0.144 0.107 0.103	1/0 10/1 6/2 4/0 5/0
	N/A	0.08 ppm for 8 hour	1997 1998 1999 2000 2001	0.082 0.100 0.108 0.800 0.088	NM/0 NM/4 NM/4 NM/0 NM/1
Nitrogen Dioxide	0.25 ppm for 1 hour	0.053 ppm annual average	1997 1998 1999 2000 2001	0.090 0.102 0.106 0.099 0.084	0/0 0/0 0/0 0/0 0/0
Sulfur Dioxide	0.25 ppm for 1 hour	0.14 ppm for 24 hours or 80 µg/m^3 (0.03 ppm) annual average	1997 1998 1999 2000 2001	NM NM NM NM NM	NM NM NM NM NM
PM_{10}[3,4]	50 µg/m^3 for 24 hours	150 µg/m^3 for 24 hours	1997 1998 1999 2000 2001	98.0 106.0 150.0 91.0 140.0	5/0 8/0 10/0 9/0 10/0
$PM_{2.5}$[4]	N/A	65 µg/m^3 for 24 hours	1997 1998 1999 2000 2001	NM NM 101.0 78.0 76.0	NM NM NM/5 NM/1 NM/2

ppm = parts per million
µg/m^3 = micrograms per cubic meter
NM = not measured
PM_{10} = particulate matter 10 microns in diameter or less
$PM_{2.5}$ = particulate matter 2.5 microns in diameter or less

TABLE 3.3-1
LOCAL AIR QUALITY LEVELS [1,2,3,4]

Pollutant	California Standard	Federal Primary Standard	Year	Maximum[2] Concentration	Days (Samples) State/Federal Std. Exceeded

1. Data is based on measurements taken at the Stockton/Hazelton monitoring station located at 1591 East Hazelton Street, Stockton, California.
2. Maximum concentration is measured over the same period as the California Standard.
3. PM_{10} exceedances are based on state thresholds established prior to amendments adopted on June 20, 2002.
4. PM_{10} and $PM_{2.5}$ exceedances are derived from the number of samples exceeded, not days.

Source: Data obtained from the California Air Resources Board ADAM Data Summaries Website, www.arb.ca.gov/adam/welcome.html.

Local Ambient Air Quality

The SJVAPCD and CARB operate several air quality monitoring stations within the Basin. The Hazelton Street monitor is the nearest station, located approximately 13 miles south of the project site. The following air quality information briefly describes the various types of pollutants monitored at the stations.

Ozone (O_3)

O_3 is a colorless toxic gas that can irritate the lungs and damage materials and vegetation. Levels of O_3 exceed Federal and State standards throughout the Air Basin. Because O_3 formation is the result of photochemical reactions between NO_X and reactive organic compounds (ROC), typically produced by combustion sources, peak concentrations of O_3 occur downwind of precursor emission sources. The entire Air Basin is designated as a non-attainment area for State and Federal O_3 standards. As indicated in Table 3.3.1, some exceedances of State standards for O_3 occurred at local air monitoring stations from 1997 through 2001. The State O_3 standard was exceeded between 1 and 10 times per year, over this period. The Federal O_3 standard was exceeded once in 1998 and twice in 1999.

Carbon Monoxide (CO)

CO is an odorless, colorless toxic gas, produced almost entirely from combustion sources (automobiles). This pollutant interferes with the transfer of oxygen to the brain and it is generally associated with areas of high traffic density. The entire Air Basin is designated as an attainment area for State and Federal CO standards. The 8-hour and 1-hour standards have not been exceeded at the Hazelton Street Station in the last five years.

Nitrogen Oxides (NO2; NOx)

Nitrogen oxides (NO_X), the term used to describe the sum of nitrogen oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen, are produced by high-temperature combustion processes (e.g., from motor vehicle engines, power plants, refineries, and other industrial operations).[2] NO_2, a term often used interchangeably with NOX, is a reddish-brown gas that can cause breathing difficulties at high levels. The entire Air Basin is designated as an attainment area for State and Federal NO_2 standards. The NO_2 standard was not exceeded at the Hazelton Street Station over the last five years.

Fine Particulate Matter (PM_{10}; $PM_{2.5}$)

On July 1, 1987, the EPA replaced the total suspended particulate (TSP) standard with a new particulate standard known as PM_{10}. PM_{10} includes particulate matter 10 microns or less in diameter (a micron is one millionth of a meter). Sources of PM_{10} include agricultural operations, industrial processes, combustion of fossil fuels, construction and demolition and windblown dust and wildfires. The entire Air Basin is designated as a non-attainment area for State and Federal PM_{10} standards. Particulates substantially reduce visibility and adversely affect the respiratory tract. As indicated in Table 3.3.1, some exceedances of State standards for PM_{10} occurred at local air monitoring stations from 1997 through 2001, ranging from 5 to 10 times in a given year (state standards for $PM_{2.5}$ did not exist during the monitoring period of 1997 through 2001 as shown in Table 5.4-1, *Local Air Quality Levels*).

Due to recent increased concerns over health impacts from fine particulate matter, both State and Federal $PM_{2.5}$ standards have been created. In 1997, the EPA announced new $PM_{2.5}$ (particulate matter 2.5 microns or less in diameter) standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards. Beginning in 2002, based on three years of monitoring data, the EPA will designate areas as non-attainment that do not meet the new $PM_{2.5}$ standards.[3]

Following the announcement of the new national standards, CARB and the SJVAPCD began collecting monitoring data to determine the region's attainment status with respect to the new standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. The ambient annual PM_{10} standard was lowered from 30 micrograms per cubic meter ($\mu g/m^3$) to 20 $\mu g/m^3$. As no ambient annual state standard existed for $PM_{2.5}$, a new annual standard was established at 12 $\mu g/m^3$. A 24-hour average standard for both PM_{10} and $PM_{2.5}$ were retained. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current State PM_{10} standards during some parts of the year and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.[4] Particulate matter impacts primarily effect infants, children, the elderly, and those with pre-existing cardiopulmonary disease.

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2 Environmental Protection Agency Website, www.epa.gov/oar/aqtrnd97/brochure/no2.html.

3 Environmental Protection Agency Website, http://www.epa.gov/air/aqtrnd97/brochure/pm10.html

4 Staff Report: Public Hearing to Consider Amendments to the Ambient Air Quality Standards for Particulate Matter and Sulfates. California Environmental Protection Agency, Air Resources Board, May 3, 2002.

Sulfur Dioxide (SO_2; SO_X) and Lead (Pb)

Sulfur dioxide (SO_2), often used interchangeably with sulfur oxides (SO_X) and lead (Pb) levels in all areas of the Basin do not exceed Federal or State standards. The Basin is designated as attainment for both State and Federal SO_2 standards. There is no NAAQS for lead. The Hazelton Street Station did not exceed State standards for SO_X during the last five years.

Regulatory Framework

Federal Clean Air Act (CAA)

The 1970 Clean Air Act (CAA) authorized the establishment of the NAAQS and set deadlines for their attainment. The Federal Clean Air Act Amendments (FCAAA) of 1990 made major changes in deadlines for attaining NAAQS and in the actions required of areas of the nation that exceeded these standards.

California Clean Air Act (CCAA)

The 1988 California Clean Air Act (CCAA) requires that all air districts in the State endeavor to achieve and maintain CAAQS for O_3, CO, SO_2, and NO_2 by the earliest practical date. The CCAA specifies that districts focus particular attention on reducing the emissions from transportation and area-wide emission sources. The FCAAA also gives districts new authority to regulate indirect sources. Each district plan is to achieve a five percent annual reduction (averaged over consecutive three-year periods) in district-wide emissions of each non-attainment pollutant or its precursors.

San Joaquin Valley Air Pollution Control District (SJVAPCD)

Until the passage of the CCAA, the air district's primary role was the control of stationary sources of pollution such as industrial processes and equipment that stayed within their political boundaries. With the passage of the CCAA and FCAAA, air districts were also required to implement transportation control measures and were encouraged to adopt indirect source control programs to reduce mobile source emissions. These mandates created the necessity for the SJVAPCD to work more closely with cities and counties and with regional transportation planning agencies to develop new programs.

The SJVAPCD has entered into a memorandum of understanding with the transportation planning agencies. This memorandum of understanding ensures a coordinated approach in the development and implementation of transportation plans throughout the SJV. This action helps the Regional Transportation Planning Agencies comply with pertinent provisions of the federal and state Clean Air Acts, as well as related transportation legislation (such as the Transportation Equity Act for the 21st Century, Congestion Management Act, Transportation Improvement Plans, etc.).

In addition, whereas the ARB produces a major part of the SIP, it is the responsibility of the local air districts to provide additional strategies for sources under their jurisdiction for inclusion in the state's SIP.

The SJVAPCD has adopted several attainment plans to comply with CCAA and FCAAA requirements. The SJVAPCD's *Air Attainment Plan* was adopted in 1991 and most recently updated in 2001. The SJVAPCD must continuously monitor its progress in implementing attainment plans and must periodically report to the ARB and the EPA. It must also periodically revise its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the CCAA and FCCAAA. The CCAA requires districts to adopt air quality attainment plans and to review and revise their plans to address deficiencies in interim measures of progress once every three years.

To meet FCAAA and CCAA requirements, the SJVAPCD has submitted numerous plans for attaining ozone, PM_{10} and carbon monoxide standards. The current applicable plans and their purposes are shown on Table 2-3. The ozone plan projected attainment of the federal ozone standard by 1999, but did not achieve its goal. The EPA has officially redesignated the SJVAB to severe non-attainment for ozone effective December 10, 2001 with a May 31, 2002 deadline for plan submittal. The carbon monoxide plan demonstrates that CO attainment has already been reached. The PM_{10} attainment plan sets forth the approach the SJVAPCD will use to attain the NAAQS for PM_{10}. The 1997 PM_{10} Attainment Demonstration Plan has not been approved by EPA to date and the SJVAPCD expects that EPA will disapprove the plan in the next few months, triggering the need for a new plan submittal. Since the FCAAA PM_{10} attainment deadline for areas classified as serious (December 31, 2001) has passed, the SJVAPCD will be required to submit a new plan by December 31, 2002.

TABLE 3.3-2
SJVAPCD AIR QUALITY PLANS

SJVAPCD Plan	Plan Purpose
1991 Air Quality Attainment Plan for the San Joaquin Valley, January 30, 1992	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the CAAQS for ozone and CO.
1992 Federal Attainment Plan for Carbon Monoxide	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for CO.
The Ozone Attainment Demonstration Plan November 14, 1994	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for ozone. This plan also satisfies the required triennial review for the CAAQS.
Revised 1993 Rate of Progress Plan, November 4, 1994	Demonstrates reasonable further progress in reducing VOC emissions between 1997 and 1999 mandated by FCAAA.
Revised Post-1996 Rate of Progress Plan, September 20, 1995	Demonstrates reasonable further progress in reducing VOC emissions between 1997 and 1999 mandated by FCAAA.
California Clean Air Act Triennial Progress Report and Plan Revision 1995-1997, December 1998	Reports progress in implementing the 1991 Air Quality Attainment Plan for the period 1995 to 1997.
California Clean Air Act Triennial Progress	Reports progress in implementing the 1991 Air Quality

TABLE 3.3-2 SJVAPCD AIR QUALITY PLANS	
SJVAPCD Plan	**Plan Purpose**
Report and Plan Revision 1997-1999, march 15, 2001	Attainment Plan for the period 1997 to 1999.
2000 Ozone Rate of Progress Report, April 27, 2000	Demonstrates that mandated emission reductions were achieved from 1997 to 1999 and from 1990 to 1999 mandated by the FCAA.
PM-10 Attainment Demonstration Plan, May 15, 1997	Establishes the regulatory groundwork in order to bring the SJVAB into compliance with the NAAQS for PM-10.
PM-10 Attainment Plan Progress Report, August 17, 2000	Describes progress achieved by the SJVAPCD in implementing the PM-10 Attainment Demonstration Plan.
Source: *Guide for Assessing and Mitigating Air Quality Impacts*, San Joaquin Valley Air Pollution Control District, page 16.	

Among the rules adopted by the SJVAPCD are several, which apply to sources never before regulated in the Valley. Rule 4901 – Residential Wood Burning Fireplaces and Wood Heaters, calls for voluntary curtailment of wood burning on "No Burn Days" and the prohibition of sale of non-EPA certified wood heaters within the SJVAPCD's jurisdiction. Rule 4902 Residential Water Heaters, adopted June 17, 1993, requires new residential water heaters sold in the San Joaquin Valley to meet lower NOx emission standards.

In addition, SJVAPCD identified three strategies for reducing emissions generated by indirect sources in the 1991 *Air Quality Attainment Plan*. These strategies include enhanced SJVAPCD California Environmental Quality Act (CEQA) participation, encouragement of all cities and counties in the SVJ to adopt an air quality element or air quality policies as part of their General Plan, and implementation of a new and modified indirect source review (ISR) program. The SJVAPCD now actively reviews and comments on CEQA documents prepared by lead agencies and suggests mitigation measures to reduce air quality impacts. The *Air Quality Guidelines for General Plans*, adopted by the SJVAPCD in 1994, is the primary means for implementing the second strategy. The SJVAPCD has not implemented an ISR program but is promoting voluntary strategies to reduce indirect source emissions.

The SJVAPCD has undertaken steps to comply with Assembly Bill (AB) 2061 (Polanco). This bill requires assessment of socioeconomic impacts of certain new and modifies rules put forth by the SJVAPCD, plus a good faith effort to minimize adverse effects to industry and the public. Where required, the SJVAPCD now examines its proposed activities for socioeconomic effects.

Legislation including AB 1807 Tanner Air Toxics Act, AB 2588 Air Toxics "Hot Spots" Information and Assessment Act, AB 3205 Toxic Emissions Near Schools, SB 1731 "Hot Spots" Risk Reduction Mandates, the Federal Clean Air Act Amendments Title III mandate the SJVAPCD to implement a comprehensive toxic air emission program. AB 2588 requires the SJVAPCD to develop a uniform approach to catalogue the emissions of 729 toxic substances in the Valley. Prior to SJVAPCD unification, approaches to the AB 2588 requirement varied by county.

The SJVAPCD has also adopted a number of voluntary air quality programs. Examples include a Smoking Vehicles Program and the District Air Quality Education Program. Although these programs are voluntary, they provide an important link to local government and the public. The Smoking Vehicles program started as a pilot program in San Joaquin County and was expanded to cover the entire SJV in April 1993. By the end of year 2000, over 43,000 vehicles had been reported to the SJVAPCD. Nearly 30% of those receiving notice responded to the SJVAPCD and of those 53% indicate repairs were accomplished.

Toxic Air Contaminants (TAC's)

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern in California. There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as accidental releases of hazardous materials during upset conditions. Health effects of TACs include cancer, birth defects, neurological damage and death.

The SJVAPCD implements TAC controls through Federal, State and local programs. Federally, TACs are regulated by the EPA under Title III of the CAA. At the State level, the CARB has designated the Federal hazardous air pollutants as TACs, under the authority of AB 1807. The Air Toxic Hot Spots Information and Assessment Act (AB 2588) requires inventories and public notices for facilities that emit TACs. Senate Bill 1731 amended AB 2588 to require facilities with "significant risks" to prepare a risk reduction plan.

Diesel exhaust is a growing concern in the Basin area and throughout California. In 1998, CARB identified diesel engine particulate matter as a TAC. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Many of these toxic compounds adhere to the particles and because diesel particles are very small, they penetrate deeply into the lungs. Diesel engine particulate matter has been identified as a human carcinogen. Mobile sources (including trucks, buses, automobiles, trains, ships and farm equipment) are by far the largest source of diesel emissions. Studies show that diesel particulate matter concentrations are much higher near heavily traveled highways and intersections.

Prior to the listing of diesel exhaust as a TAC, California had already adopted various regulations that would reduce diesel emissions. These regulations include new standards for diesel fuel, emission standards for new diesel trucks, buses, autos, and utility equipment, and inspection and maintenance requirements for health duty vehicles. Following the listing of diesel engine particulate matter as a TAC, ARB is currently evaluating what additional regulatory action is needed to reduce public exposure. While ARB does not plan on banning diesel fuel or engines, it may consider additional requirements for diesel fuel and engines as well as other measures to reduce public exposure.

Other air quality issues of concern in the Basin include nuisance impacts of odors and dust. Objectionable odors may be associated with a variety of pollutants. Common sources of odors include wastewater treatment plants, landfills, composting facilities, refineries, and chemical plants. Odors rarely have direct health impacts, but they can be unpleasant and can lead to anger and concern over possible health effects among the public. Similarly, nuisance dust may be generated by a variety of sources including quarries, agriculture, grading and construction. Dust emissions can contribute to increased ambient concentrations of PM_{10}, particularly when dust settles on roadways where it can be pulverized and re-suspended by traffic. Dust emissions also contribute to reduced visibility and soiling of exposed surfaces.

Sensitive Receptors

Land uses considered to sensitive receptors include residences, schools, playgrounds, childcare centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent center, and retirement homes. Sensitive populations are more susceptible to the effects of air pollution than are the general population, especially those who are in proximity to localized sources of toxics and CO are of particular concern.

The proposed Vintner's Square Shopping Center project site is located within the City of Lodi, at the Kettleman Lane and Lower Sacramento Road intersection. To the south and west of the project site are undeveloped properties that are designated as commercial and agricultural. The Safeway Plaza and Sunset Plaza are commercial uses to the east and southeast. The Sunwest residential development is northeast of the project site and consists of single-family homes. To the north along Taylor Road and North Hilde Lane are approximately 30 single-family residences. Additionally, directly north of the project site and south of Taylor Road is the recently approved G-REM residential development project, which would allow for the development of up to 33 residential units (primarily single-family homes)[5].

3.3.2 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant impact on the environment. An EIR is required to focus on these effects and offer mitigation measures to avoid or substantially lessen any significant impacts which may be identified. The criteria, or standards, used to determine the significance of impacts may vary depending on the nature of the project.

Thresholds of Significance

Air quality impacts resulting from the implementation of the proposed project could be considered significant if they cause any of the following to occur:

- Conflict with or obstruct implementation of the applicable air quality plan (refer to Impact 3.3-C).

[5]The City Council later rescinded the growth management allocation given to this project and the applicant subsequently withdrew the application. Currently there are no pending applications for development of this 5.6-acre property. (J.D. Hightower, pers.comm.. Feb.'03).

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation (refer to Impacts 3.3-A and 3.3-B)
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors) (refer to Impact 3.3-D)
- Exposes sensitive receptors to substantial pollutant concentrations (refer to Impact 3.3-B)
- Create objectionable odors affecting a substantial number of people (refer to Section 1.4, Effects Found Not to be Significant).

The *SJVAPCD Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) establishes thresholds for pollutant emissions generated both during and following construction. Buildout of the Project would be required to implement control measures during construction activities in order to reduce the amount of emissions to below the significance thresholds, when possible. SJVAPCD construction and operation thresholds are indicated in Tables 3.3.3 and 3.3.4, respectively. It should be noted that although the SJVAPCD GAMAQI provides only tons per year thresholds, the district allows these thresholds to be converted into pounds per day thresholds[6]. As previously stated, the Basin is designated non-attainment for State and Federal standards for O_3 and PM_{10}. Any increase in these pollutants would create a significant and unavoidable air quality impact.

<u>IMPACT 3.3-A. Short-Term Air Quality Impacts</u>: Grading, excavation, trenching, filling and other construction activities result in increased dust emissions which would be a temporary, significant impact on regional emissions of PM_{10}. Construction would also result in exhaust emissions of CO, ROG, NO_X, SO_X, and PM_{10}.from the operation of diesel-powered heavy equipment during grading and construction and for the import of soil. These emissions would also be generated through the emissions of vehicles used by construction workers. (Less Than Significant With Mitigation).

Construction of the project would generate short-term air quality impacts during grading and construction operations. The short-term air quality analysis considers cumulative construction emissions in combination with project emissions. Temporary impacts from the project and cumulative construction activities would include:

- Clearing, grading, excavating and using heavy equipment or trucks creates large quantities of fugitive dust, and thus PM_{10};
- Heavy equipment required for grading and construction generates and emits diesel exhaust emissions;
- The vehicles of commuting construction workers and trucks hauling equipment generate and emit exhaust emissions;

[6] According to Mr. Hector R. Guerra, Senior Air Quality Planner for the SJVAPCD, the Operational ROG and NO_X tons/year threshold (10 tons/year) may be converted to lbs/day by converting the tons to pounds and dividing by 365. With this function, the daily Operational thresholds for ROG and NO_X are 54.79 lbs/day.

- ❖ Off-site regional air emissions associated with temporary power lines needed to operate construction equipment (although these emissions are locally *deminimus* as they are dispersed throughout the western U.S., and individual power plants are required to mitigate air emissions); and
- ❖ Emissions from the stationary construction equipment used on-site.

The above described emissions from increases in use of power and vehicle emissions are generated during construction activities. Project-related power plant and motor vehicle emissions are further analyzed in Impact Statement 3.3-B, Long-Term Impacts. Potential odors generated during construction operations are temporary in nature and are not considered to be an impact

It should be noted that emissions produced during grading and construction activities are "short-term" in nature as they occur only for the duration of construction.

Fugitive Dust Emissions

Short-term impacts from the project would primarily result in fugitive particulate matter emissions during construction. Grading, excavation, trenching, filling and other construction activities result in increased dust emissions. Regulation VIII of the San Joaquin Valley Unified Air Pollution Control District specifies control measures for specified outdoor sources of fugitive particulate matter emissions. Rule 8010 contains administration requirements, Rule 8020 applies to construction activities, and Rule 8070 applies to vehicle and equipment parking, fueling, and service areas. The Air District does not require a permit for these activities, but does impose measures to control fugitive dust, such as the application of water or a chemical dust suppressant to graded areas.

Construction would also result in exhaust emissions of CO, ROG, NO_X, SO_X, and PM_{10} from the operation of diesel-powered heavy equipment. Exhaust emissions from construction include emissions associated with the transport of materials and supplies to and from the site, emissions produced onsite as the equipment is used and emissions from trucks transporting excavated materials from the site and fill soils to the site.

Fugitive dust from grading and construction is expected to be short-term and would cease following project completion. Additionally, most of this material is composed of inert silicates, rather than complex organic particulates as would be released from combustion sources, which are more harmful to health. Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM_{10} generated as a part of fugitive dust emissions. As previously discussed, PM_{10} poses a serious health hazard; alone or in combination with other pollutants. PM_{10} is emitted both during construction activities and as a result of wind erosion over exposed soil surfaces. Clearing and grading activities comprise the major sources of construction dust emissions, but traffic and general disturbance of the soil also generates significant dust emissions.

Construction dust impacts are extremely variable, depending on wind speed, soil type, soil moisture, the type of construction activity and acreage affected by construction activity. The highest potential for construction dust impacts will occur during the dry late spring, summer and early fall months when soils are dry. The potential for dust nuisance is low because of the lack of development in the vicinity.

Since San Joaquin County is a nonattainment area for PM_{10}, construction dust is considered a temporary significant impact on regional emissions of PM_{10}. However, this impact can be mitigated, to a level that is less than significant. Development and implementation of a PM_{10} dust prevention and control plan in compliance with Regulation VIII that specifies the methods of control that will be utilized demonstrate the availability of needed equipment and personnel and identifies a responsible individual who can authorize implementation of additional measures, if needed, would be required. To mitigate short-term air quality impacts, the project shall implement Regulation VIII Control Measures as outlined in Table 6-2 – *Regulation VIII Control Measures for Construction Emissions of PM10* and Table 6-3 – *Enhanced and Additional Control Measures for Construction Emissions of PM10* in the SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts.*

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions generated during the transport of machinery and supplies to and from the project site, emissions produced on-site as the equipment is used and emissions from trucks transporting materials to/from the site. Additionally, as part of the site's grading operations, the project applicant has indicated the need to import fill material to elevate the building pad foundations. The grading operations are expected to import approximately 50,000 cubic yards of soil. Based upon the standard dimensions of a haul truck, it is estimated that each truck would haul 12 cubic yards, with an average of 3 minutes to load the truck. The haul route considered for this analysis is importing soil from a site along Lower Sacramento Road, south of the proposed project. A conservative estimate of the number of truck trips required to transport soil is 250 yards a day, or 21 inbound and 21 outbound trips per day. The SJVAPCD has not established significance criteria for short-term construction operations. Rather, the SJVAPCD has stated that compliance with Regulation VIII Control Measures will constitute sufficient mitigation to reduce PM_{10} emissions to a less than significant level.

<u>Mitigation 3.3-A</u>: To reduce construction and short-term impacts to a less than significant level, the City of Lodi shall require the construction manager to implement all of the following measures throughout grading and construction (Less Than Significant With Mitigation):

- **All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.**

- **All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.**

- **All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.**

- **With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.**

- **When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.**

- **All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. *(The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)***

- **Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.**

- **Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.**

- **Any site with 150 or more vehicle trips per day shall prevent carryout and trackout.**

- **Limit traffic speeds on unpaved roads to 15 mph.**

- **Install sandbags or other erosion control measures to prevent silt runoff to public roadways from sites with a slope greater than one percent.**

- **Install wheel washers for all exiting trucks, or wash off all trucks and equipment leaving the site, within an onsite, contained washdown area;**

- **Install wind breaks at windward side(s) of construction areas;**

- **Suspend excavation and grading activity when winds exceed 20 mph; and;**

- **Limit area subject to excavation, grading, and other construction activity at any onetime.**

- **Regardless of windspeed, an owner/operator must comply with Regulation VIII's 20 percent opacity limitation.**

<u>IMPACT 3.3-B. Long-Term Operational Impacts</u>: Based on traffic operations after project implementation, a CO Hot Spot analysis is not triggered. Local carbon monoxide emissions would be less than significant with implementation of the project. The project would result in an overall increase in the local and regional pollutant load due to direct impacts from vehicle emissions and indirect impacts from increased use of electricity and natural gas consumption. Total project operational emissions (area and mobile source) would result in significant impacts for ROG and NOX. (Significant Impact).

The calculations for the following analysis are based upon the project Traffic Study (refer to Section 3.2, *Traffic and Circulation*). Buildout of the Vintner Square Shopping Center would occur incrementally over time. However, per the phasing plan and project Traffic Study, the analysis identifies Year 2004 as the horizon buildout date.

Long-term air quality impacts would consist of mobile source emissions generated from project-related traffic and from stationary source emissions generated directly from the natural gas consumed and indirectly from the power plant providing electricity to the Project site. Emissions associated with each of these sources are discussed and calculated below.

Mobile Source Emissions Only: Regional Impacts

Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant being discussed, the potential air quality impact may be of either regional or local concern. For example, ROG and NO_X are all pollutants of regional concern (NO_X and ROG react with sunlight to form O_3 or photochemical smog). However, CO tends to be a localized pollutant, dispersing rapidly at the source. Long-term impacts to regional air quality levels are analyzed below. The predicted emissions associated with vehicular traffic (mobile sources) are not subject to the District's permit requirements. However, the District is responsible for overseeing efforts to improve air quality within the San Joaquin Valley. The District has prepared an Air Quality Attainment Plan to bring the San Joaquin Valley into compliance with the California Ambient Air Quality Standard for ozone. The District reviews land use changes to evaluate the potential impact on air quality. The District has established a significance level for ROG and NOX of 10 tons per year each, but has not established levels of significance for other pollutants.

As previously discussed, the Basin is a non-attainment area for Federal and State air quality standards for O_3 and PM_{10}. Nitrogen oxides and ROG are regulated O_3 precursors (a precursor is defined as a directly emitted air contaminant that, when released into the atmosphere, forms or causes to the formed or contributes to the formation of a secondary air contaminant for which an ambient air quality standard has been adopted). Project-generated vehicle emissions have been estimated using the URBEMIS 2001 computer model (based on the URBEMIS7G model). This model predicts ROG, CO, NO_X, SO_X and PM_{10} emissions from motor vehicle traffic associated with new or modified land uses (refer to Appendix D, Air Quality Data, for model input values used for this project with the model output). Project trip generation rates were based on the Project Traffic Study and URBEMIS 2001 default settings (refer to Section 3.2, Traffic and Circulation, and Appendix C, *Traffic Study*). However, per SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*, only ROG and NO_X were quantified with URBEMIS 2001. Table 3.3.3, Mobile Source Emissions, presents anticipated regional mobile emissions.

Mobile source emissions (emissions from project-related traffic) account for the majority of the project's operational emissions. Operational emissions are based on land use data provided by the Applicant (as discussed in Section 2.0, Project Description), and by assuming buildout occupancy by 2004.

TABLE 3.3-3 MOBILE SOURCE EMISSIONS[1]		
Project	Pollutant (Tons/Year)	
	ROG	NOX
(unmitigated) Vehicle Emissions[1]	30.9	31.5
ROG = reactive organic gases NOX = nitrogen oxides		
1. Based on UREBMIS 2001 modeling results, worst-case seasonal emissions for area and mobile emissions, and trip rate data provided in the Project Traffic Study.		

Area Source Emissions

The proposed Project would result in personal product use and would create electrical demands and heating demands resulting in natural gas combustion. Electrical demand would result in electrical generation emissions from local power plants. The URBEMIS2001 computer model predicted emissions from typical energy consumption, gas usage, landscape maintenance, and consumer products. The model output is included in Appendix D, *Air Quality Data*. As indicated in Table 5.4-4, *Area Source Emissions*, area source emissions generated by the Project at buildout would not individually exceed SJVAPCD thresholds. However, as discussed below, area source emissions combined with vehicular emissions would cause operational emissions to exceed SJVAPCD thresholds for ROG and NO_X.

TABLE 3.3-4 AREA SOURCE EMISSIONS[1]		
Project	Pollutant (Tons/Year)	
	ROG	NOX
(unmitigated) • Area Source Emissions[1]	0.05	0.36
ROG = reactive organic gases NOX = nitrogen oxides		
1. Area Source emissions excludes the use of fireplaces and wood burning stoves.		

As shown in Table 3.3.5, *Long Term Project Emissions*, the mobile source and area emissions associated with the proposed project would generate pollutant emissions in excess of SJVAPCD thresholds. Thus, implementation of the proposed project would create a significant and unavoidable individual project impact from ROG and NO_x emissions. ROG and NOx are also precursors for O_3. The Basin is currently in non-attainment for O_3. As the proposed project would exceed established ROG and NO_x thresholds, the project would create a significant and unavoidable impact to regional levels of these pollutants.

Table 3.3-5 LONG-TERM PROJECT EMISSIONS[1,2]		
Project	**Pollutant (Tons/Year)**	
	ROG	**NOX**
(unmitigated) • Area Source Emissions[2] • Vehicle Emissions	 0.05 30.9	 0.36 31.5
Total Unmitigated Emissions	31.4	31.86
SJVAPCD Threshold	10	10
Is Threshold Exceeded? (Significant Impact?)	***Yes***	***Yes***
ROG = reactive organic gases NOX = nitrogen oxides		
1 – Based on UREBMIS 2001 modeling results, worst-case seasonal emissions for area and mobile emissions, and trip rate data provided in the Project Traffic Study. 2 – Area Source emissions excludes the use of fireplaces and wood burning stoves.		

Localized CO Emissions

Carbon monoxide emissions are a function of vehicle idling time and, thus, under normal meteorological conditions, depend on traffic flow conditions. Carbon monoxide transport is extremely limited; it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, CO concentrations close to a congested roadway or intersection may reach unhealthful levels, affecting sensitive receptors (residents, school children, hospital patients, the elderly, etc.). Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable Level of Service (LOS). CO "Hot Spot" modeling is required if a traffic study reveals that the project will reduce the LOS on one or more streets to E or F; or, if the project will worsen an existing LOS F.

A traffic study was prepared by Omni-Means for the proposed Project. The results of the intersection analysis are shown in Table 5.4-6, *Cumulative, and Cumulative + Project Intersection Level-of-Service AM and PM Peak Hour*. With cumulative no project Year 2025 traffic volumes, the study intersection LOS would operate at acceptable levels. Significant peak hour volume increases in through-traffic would be experienced along Lower Sacramento Road and Kettelman Lane. However, with the planned roadway widening, traffic flows would not reach significant congested levels. All remaining study intersection would operate at LOS C or better during the AM and PM peak hours with cumulative effect.

Year 2025 cumulative traffic projections contain specific land use assumptions for the project site and encompassing traffic analysis zone (TAZ). These land use projections are based on the City of Lodi's

General Plan buildout. For this reason, cumulative volume projections on Lower Sacramento Road and Kettleman Lane already contain trip generation specific to the proposed project site. City of Lodi Engineering staff made a trip generation comparison between projected General Plan land uses for the subject TAZ (#172) and those now being proposed as part of the project and other planned development within the TAZ.[7] The net difference in daily and peak hour trip generation between City of Lodi land use projections and the proposed project was calculated so as not to over-estimate cumulative plus project impacts to the street network. Based on City calculations, the net increase in cumulative project trips (compared with the traffic model projects) would be 1,481 daily trips with 363 AM peak hour trips and 41 PM peak hour trips. With proposed project traffic, study intersection LOS would remain unchanged from future (no project) conditions, resulting in less than significant impacts.

TABLE 3.3-6
CUMULATIVE, AND CUMULATIVE + PROJECT INTERSECTION LEVEL-OF-SERVICE AM AND PM PEAK HOUR [1,2]

Intersection		Cumulative		Cumulative + Project	
		AM LOS	PM LOS	AM LOS	PM LOS
1	L. Sacramento/Taylor	B 11.7 secs	B 13.0 secs	B 12.1 secs	B 13.0 secs
2	L. Sacramento/Sun.Safe.	B 12.3 secs	C 20.8 secs	B 20.0 secs	C 28.1 secs
3	L. Sacramento/Kettelman	C 35.0 secs	D 41.5 secs	C 35.0 secs	D 41.6 secs
4	Kettelman/Tienda	C 24.5 secs	D 44.8 secs	C 25.0 secs	D 45.0 secs
5	Kettelman/Mills	C 29.7 secs	C 25.7 secs	C 30.3 secs	C 25.9 secs
6	Kettelman/Road "A"[3]	C 24.7 secs	C 25.2 secs	C 26.5 secs	C 32.2 secs

1 Existing AM and PM peak hour intersection turning movement counts conducted by Omni-Means Engineers & Planners, City of Lodi, April/May 2002.

2 Level-of-Service (LOS) for signalized and unsignalized intersections is base on the *2000 Highway Capacity Manual*, Chapters 16 and 17. Average vehicle delays are expressed in seconds.

3 With proposed project traffic, Road "A" would be constructed along the project site's western frontage. The intersection of Kettelman/Road "A" would be signalized and provide direct access to the project site. As a result of this new intersection, the raised median on Lower Sacramento Road would be extended through Taylor Road, preventing left-turn access outbound (eastbound).

<u>Mitigation 3.3-B</u>. Customers of the Vintner's Square Shopping Center will mostly rely on the use of vehicles to get to and from the center. The shopping center is dependent on the use of power for its operation. Consequently, there are not feasible mitigation measures to reduce this impact to a less than significant level. (Significant and Unavoidable Impact).

7 Paula Fernandez, Senior Traffic Engineer, City of Lodi, "Vintner's Square Shopping Center, Proposed Project and Modified San Joaquin County of Governments Model", Daily and peak hour trip generation, October 28, 2002.

<u>IMPACT 3.3-C. Consistency with Air Quality Attainment Plans</u>: The project would be consistent with the Air Quality Attainment Plan (AQAP) criteria and a less than significant impact regarding consistency with the AQAP would result. (Less Than Significant Impact).

As noted under the Significance Criteria discussion, a potentially significant impact to air quality would occur if the project would conflict with or obstruct the implementation of the applicable air management or attainment quality plan. Although the project would represent an incremental negative impact to air quality in the Basin, of primary concern is that project-related impacts have been properly anticipated in the regional air quality planning process and reduced whenever feasible. Therefore, it is necessary to assess the project's consistency with the applicable district air quality management or attainment plan(s).

Conformity with the Air Quality Attainment Plan

The California Clean Air Act requires non-attainment districts with severe air quality problems to provide for a five percent reduction in non-attainment emissions per year. The San Joaquin Valley Air Pollution Control District prepared an Air Quality Attainment Plan for the San Joaquin Valley Air Basin in compliance with the requirements of the Act. The plan requires best-available retrofit technology on specific types of stationary sources to reduce emissions. The California Clean Air Act and the Air Quality Attainment Plan also identify transportation control measures as methods of reducing emissions from mobile sources. The California Clean Air Act defines transportation control measures as "any strategy to reduce vehicle trips, vehicle use, vehicle miles traveled, vehicle idling or traffic congestion of the purpose of reducing motor vehicle emissions." Although, treated as one plan, the SJVAPCD separates its AQAP into two plans. One is the AQAP for PM_{10} and the other is the AQAP for Ozone. The AQAPs of the San Joaquin Valley Air Basin identify the provisions to accommodate the use of bicycles, public transportation and traffic flow improvements as transportation control measures.

The project-related ROG and NO_x emissions predicted by the URBEMIS2001 model do not exceed the District's significance threshold levels. Additionally, the *Consultants Report on the Transportation Impacts for the Proposed Lowe's Commercial Center* prepared by Omni-Means, Ltd. recommends mitigation measures, such as roadway demarcation improvements, for intersections and street segments which would have the potential to fall below an acceptable Level of Service due to the short-term impact of future traffic. The study also allocates a proportionate share of the mitigation measures to the Project that include public transportation facilities and the addition of lanes for the improvement of traffic flow. These improvements are included in the transportation control measures in compliance with the AQAPs.

The AQAP recognized growth of the population and economy within the air basin. The AQAP predicted the workforce in San Joaquin County to increase 40 percent and housing to increase 30 percent from 1990 to 2000. Although the proposed project was not anticipated by the AQAP, it is consistent with growth projections in the County. Thus, the Project is considered consistent with the AQAP.

Mitigation 3.3-C: Analysis has concluded that the proposed project is consistent with the AQAP criteria therefore no mitigation is required. (Less Than Significant Impact)

IMPACT 3.3-D. Cumulative Impacts: Impacts to regional air quality resulting from development of cumulative projects would significantly impact existing air quality levels. Impacts for ROG, NO_X would be considered significant. (Significant Impact).

Based on earlier discussions of the SJVAPCD GAMAQI, any project that would have an individually significant operational air quality impact would also be considered to have a significant cumulative air quality impact. Based on the fact that the proposed project operational ROG and NO_X levels exceed the SJVAPCD tons/year significance thresholds, a significant and unavoidable cumulative impact would occur in this regard.

Mitigation 3.3-D: SJVAPCD Standards and City Municipal Code requirements would be implemented on a project-by-project basis. However, these requirements would be insufficient to reduce cumulative ROG and NOx emissions to a less than significant level. (Significant and Unavoidable Impact).

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